



# University of Hawaii at Manoa

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RP:0087

Mr. James K. Ikeda  
Acting Chief  
Environmental Protection and  
Health Services Division  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Mr. Ikeda:

Water Quality Certification (WQC No. 114)  
Kaanapali Shores, Embassy Suites and Maui Kai  
(Proposed Shoreline Protection)  
Kaanapali, Maui

The Environmental Center has reviewed the above referenced document with the assistance of Frans Gerritsen, Ocean Engineering; and Nancy Kanyuk, Environmental Center. The proposed action involves construction of a 1250-foot long rock revetment to provide storm wave protection to the Aston Kaanapali Shores complex, Embassy Suites Hotel property, and Maui Kai Condominium complex. It is proposed that the revetment will prevent further erosion of the shoreline due to wave action which has seriously affected the properties and, if allowed to continue, would threaten the structural integrity of existing and proposed facilities.

## General Comments

Dikes, seawalls, and related coastal structures are not acceptable alternatives to adequate long-range planning for major structures in the coastal area. The erosion-related problems currently being experienced along the Kaanapali coast reflect an avoidable failure to consider known environmental attributes in the planning process.

It is well known that shoreline structures may adversely affect adjacent properties and beaches, exacerbating already serious erosion problems. In reviews of the 1985 negative declaration of a proposed rock revetment along 700 feet of shoreline at the neighboring Mahana Resort Condominium, both the Environmental Center and the staff of the Maui County Planning Department identified several serious concerns: the proposed design of the revetment might engender adverse impacts on

adjacent properties and beaches; effects of the proposed action might include the loss of beach resources along the Mahana and adjacent shoreline; and the project was planned within an environmentally sensitive, erosion-prone area. The recent (1987) assessment by Dames & Moore indicates (p. 21) that "it is apparent that there has been persistent, although small recession of the vegetation line at the north end of the Maui Kai Condominium, the northern neighbor of the Mahana Condominium." (p. 21) In addition, accompanying photographs document the loss of beach and structural damage from erosion of the shorelines adjacent to the Mahana revetment. In view of the proven susceptibility of this area to shoreline erosion, and in anticipation of rising sea level, the evolving development scenario along this coastline is short-sighted and naive.

Although the proposed revetment is continuous, the three properties present varying degrees of need. The shoreline crest is presently within 14 feet of the Maui Kai building, less than 20 feet from some of the Kaanapali Shores buildings, and approximately 40 feet from the Embassy Suites Hotel (under construction). It is apparent then that immediate measures are necessary in order to prevent structural damage to the two most threatened properties. However, to imply, as the assessment does, that the proposed revetment will result in a naturally occurring restoration of the beach is misleading. The most likely outcome would be that the revetment would cause a narrowing or loss of the beach area, and in a worst case situation, would result in a complete loss of beach fronting the revetment (SMA Permit Application, p. 15). Hence it would seem a more accurate assessment to say that the beach will be sacrificed for the property.

As to the the Embassy Suites development under construction, given the current conditions of rapid erosion in the Kaanapali area, a 40 foot setback in an unstable beach area, in all likelihood is not adequate to ensure the resort's safety. The decision to proceed with this development can only have been predicated on the assumption that some form of shoreline stabilization structure would be installed. In the context of a rational planning process, coastal structures of the type proposed should only be considered as emergency procedures of last resort.

#### Water Quality

The Section 401 Water Quality Certification application states that "water quality at the site may not meet applicable standards due to erosion of terrigenous materials behind the beach" (8b). It was noted that water visibility was poor off the front of the reef and turbid in a distinctly soil-colored patch extending between 6 and 20 feet offshore. This persistent turbidity suggests that there is poor offshore circulation which has direct implications with regard to what has been described, in characteristics of discharge, as "minor siltation" of inshore waters associated with the construction phase of the project. If beach erosion

due to wave action generates turbidity sufficient to exceed existing water quality standards, it is very likely that excavation to -8 feet along the shore for emplacement of bedding, armor rock, and toe boulders will generate significantly more turbidity, regardless of the proposed cofferdam. What will be the mode of disposition of dewatering effluent during this phase of the work? Considering the extent of the project, will the construction phase exceed 2 weeks and therefore require filing for an NPDES Permit?

In view of these considerations, the Environmental Center fully concurs with the recommendation that a tentative Section 401 WQC be public noticed.

#### Figures and Tables

Figures 6 and 7 indicate a "maximum restored sand surface" and "approximate level regraded beach", respectively. These levels need further clarification. Do they indicate expected natural recovery of the beach, or man-made levels?

There is a discrepancy in Table 1, describing average design wave and water level parameters. A deepwater wave (S-SW hurricane) of 30.3 feet would generate a wave height much greater than 5.5 feet above mean sea level.

#### Stability of the Toe

We remain concerned that the increased wave action generated by the revetment may result in a loss of stability of the toe.

We thank you for the opportunity to comment on this document and look forward to your consideration and response to our comments.

Yours truly,



John T. Harrison  
Environmental Coordinator

cc: DEQC  
L. Stephen Lau  
Dames and Moore  
Frans Gerritsen  
Nancy Kanyuk